

WHAT IS CLAIMED IS:

1. A method of regulating the *in vitro* proliferation of a multipotent neural stem cell and/or the proliferation of progeny of said neural stem cell comprising the steps of:
- 5 (a) dissociating mammalian neural tissue containing at least one multipotent neural stem cell capable of producing progeny that are capable of differentiating into neurons, astrocytes and oligodendrocytes, and
- (b) proliferating said multipotent neural stem cell in a culture medium containing at least one proliferative factor that induces stem cell proliferation and a
- 10 regulatory factor that regulates proliferation of said multipotent neural stem cell and/or proliferation of progeny of said multipotent neural stem cell.
2. The method of claim 1 wherein said proliferative factor is selected from the group consisting of EGF, amphiregulin, aFGF, bFGF, and TGF α .
3. The method of claim 1 wherein said proliferative factor is bFGF.
- 15 4. The method of claim 1 wherein said regulatory factor is selected from the group consisting of heparan sulfate, CNTF, retinoic acid, activin, interleukins, and EGF.
5. The method of claim 3 wherein said regulatory factor is heparan sulfate.
6. The method of claim 3 wherein said regulatory factor is EGF.
- 20 7. The method of claim 1, wherein said multipotent neural stem cell is derived from a mammal.
8. The method of claim 1 wherein said multipotent neural stem cell is derived from an adult donor.
9. The method of claim 1 wherein said stem cell is derived from a human.

10. The method of claim 8 wherein said stem cell is derived from a human with a neurological disorder.

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